

Amendments to the claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

Claim 1. (Currently amended) A stent comprising (a) at least one material selected from the group consisting of (i) a material consisting essentially of at least one non-metallic shape memory polymer (SMP) and/or (ii) a scaffold comprising a non-shape memory material that supports at least one material consisting essentially of at least one non-metallic SMP, and (b) optionally at least one non-shape memory ingredient; wherein said at least one SMP has up to two stimulus[[i]]-triggered shapes in memory; and wherein the stent contains no shape memory materials other than the at least one non-metallic SMP.

Claim 2. (Canceled)

Claim 3. (Currently amended) The stent as claimed in of claim 1, wherein the at least one non-shape memory ingredient, wherein the non-shape memory material is selected from the group consisting of at least one of an x-ray contrast substance, an inorganic nanoparticle material, an anti-inflammatory active substance, an analgetic substance, an antibiotic active substance, an active substance against viruses and fungi, an antithrombic active substance, an cytostatic active substance, an immunosuppressive active substance and an active substance for lowering restenosis.

Claim 4. (Currently amended) The stent as claimed in of claim 1, wherein the at least one non-metallic SMP is selected from the group consisting of at least one of an SMP-containing polymer network, a thermoplastic SMP material, an SMP-containing composite polymer material, an SMP-containing polymer blend and combinations thereof.

Claim 5-15. (Canceled).

Claim 16. (Currently amended) The stent as claimed in of claim 1, wherein the stimulus[[i]] is selected from the group consisting of at least one of a thermal change, a light wavelength change and a pH change.

Claim 17. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP-containing material is selected from the group consisting of at least one of biocompatible and haemocompatible.

Claim 18. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has an e-module value of approximately 0.5 to approximately 50 Mpa.

Claim 19. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has an elongation of break of approximately 100% to approximately 1200%.

Claim 20. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset fixation value of more than approximately 90%.

Claim 21. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset fixation value of more than approximately 92%.

Claim 22. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset fixation value of more than approximately 95%.

Claim 23. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset fixation value of more than approximately 98%.

Claim 24. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset ratio after five cycles in a thermo-mechanical experiment of more than approximately 90%.

Claim 25. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset ratio after five cycles in a thermo-mechanical experiment of more than approximately 92%.

Claim 26. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset ratio after five cycles in a thermo-mechanical experiment of more than approximately 95%.

Claim 27. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP has a reset ratio after five cycles in a thermo-mechanical experiment of more than approximately 98%.

Claim 28. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP comprises at least one of caprolacton units, pentadecalacton units, ethyleneglycol units, propyleneglycol units, lactic acid units, glycol acid units and combinations thereof.

Claim 29. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the SMP comprises cross-linked caprolactonmacromonomers.

Claim 30. (Currently amended) The stent ~~as claimed in~~ of claim 1, wherein the stent is ~~prepared by selected from the group consisting of being at least one of an extrusion method extruded, a coating method coated, a casting method casted, a spinning spinned, and weaving method weaved~~ and combinations thereof.

Claim 31. (Currently amended) A stenting system comprising the stent of claim 1 and a catheter selected from the group consisting of at least one of a temperature-controlled balloon catheter and a balloon catheter with an optical fibrer.

Claim 32. (Currently amended) A method for the treatment of a patient needing a stent minimally invasive implantation of the stent of claim 1 into a patient in need thereof comprising:

- (i) placing the stent of claim 1 onto a catheter selected from the group consisting of at least one of a temperature-controlled balloon catheter and a balloon catheter with an optical fibrer;
- (ii) inserting the stent into a desired position;
- (iii) expanding the stent by application of at least one first stimulus[[i]]; and
- (iv) fixing the expanded stent by exposure to at least one second stimulus[[i]]

in a patient in need thereof.

Claim 33. (Currently amended) The method claimed in of claim 32, wherein the at least one first stimulus[[i]] is selected from the group consisting of at least one of a thermal change, a light wavelength change and a pH change.

Claim 34. (Currently amended) The method claimed in of claim 32, wherein the at least one second stimulus[[i]] is selected from the group consisting of at least one of a thermal change, a light wavelength change and a pH change.

Claim 35. (Currently amended) A method of treatment of a patient needing removal of the stent of claim 1 for the minimally invasive removal of the stent of claim 1 from a patient comprising:

- (i) inserting a balloon catheter into an implantation location;
- (ii) applying at least one stimuli to the stent in order to activate its shape memory; and
- (iii) removing the stent and balloon catheter

in a patient in need thereof.

Claim 36. (Currently amended) The method claimed in of claim 35, wherein the at least one stimulus[[i]] is selected from the group consisting of at least one of a thermal change, a light wavelength change and a pH change.

Claim 37. (Currently amended) A stent consisting essentially of at least one non-metallic shape memory polymer (SMP)~~and optionally at least one non-shape memory ingredient~~; wherein said at least one SMP has up to two stimuli-triggered shapes in memory.

Claim 38. (Currently amended) The stent ~~as claimed in~~ of claim 37, wherein the at least one non-shape memory ingredient is selected from the group consisting of at least one of an x-ray contrast substance, an inorganic nanoparticle material, an anti-inflammatory active substance, an analgetic substance, an antibiotic active substance, an active substance against viruses and fungi, an antithrombic active substance, a cytostatic active substance, an immunosuppressive active substance and an active substance for lowering restenosis.

Claim 39. (Currently amended) The stent ~~as claimed in~~ of claim 37, wherein the at least one non-metallic SMP is at least one of an SMP-containing polymer network, a thermoplastic SMP material, an SMP-containing composite polymer material, an SMP-containing polymer blend and combinations thereof.

Claim 40. (Currently amended) The stent ~~as claimed in~~ of claim 37, wherein the SMP is selected from the group consisting of ~~comprises~~ at least one of caprolacton units, pentadecalacton units, ethyleneglycol units, propyleneglycol units, lactic acid units, glycol acid units and combinations thereof.

Claim 41. (Currently amended) The stent ~~as claimed in~~ of claim 37, wherein the stimulus[[i]] is selected from the group consisting of at least one of a thermal change, a light wavelength change and a pH change.

Claim 42. (New) The stent of Claim 1, wherein the material (a) is selected from the group consisting of ~~at least one of~~ (i) a material consisting essentially of at least one non-metallic shape memory polymer (SMP) and (ii) a scaffold comprising a non-shape memory material that supports at least one material consisting essentially of at least one non-metallic SMP.

Claim 43. (New) The stent of Claim 1, further comprising at least one non-shape memory ingredient.

Claim 44. (New) The stent of Claim 42, further comprising at least one non-shape memory ingredient.

Claim 45. (New) The stent of Claim 37, further comprising at least one non-shape memory ingredient.